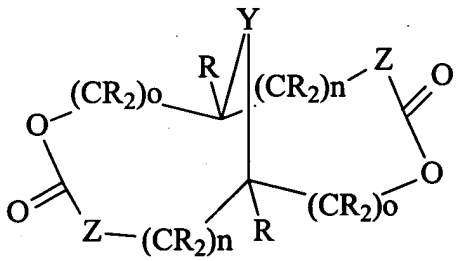
WHAT IS CLAIMED IS:

1. A copolymer having, in polymerized form, units derived from a (a) monocyclic ester or corresponding hydroxy acid or (b) a monocyclic carbonate, or both (a) and (b), and units derived from a bicyclic diester and/or carbonate.

2. The copolymer of claim 1 wherein the copolymer contains units derived from a monocyclic ester or corresponding hydroxy acid, and the monocyclic ester is a lactone, a dioxanone, a dioxan(dione), an ester-amide or a mixture of two or more such monocyclic esters.

3. The copolymer of claim 2 which is thermoplastic.

4. The copolymer of claim 3 wherein the bicyclic diester and/or carbonate has the structure



wherein each R is independently lower (C_{1-4}) alkyl or hydrogen, each Z is –O– or a covalent bond, each n and each o are independently zero or a positive integer, provided that the values of n and o, taken together, are such that the main ring contains 6 or 7 members when each Z is a covalent bond and 8 or 9 members when each Z is –O–, and Y is $-(CR_2)_m-$ where m is 1, 2 or 3.

5. The copolymer of claim 4, which contains from about 0.05 to about 1.5 weight percent, based on the total weight of the copolymer, of units derived from a bicyclic diester.

6. The copolymer of claim 5, wherein the monocyclic ester is lactide.

7. The copolymer of claim 6 wherein the bicyclic diester is 2,5-dioxa-bicyclo[2.2.2]octane-3,6-dione.

8. The copolymer of claim 7 that has a number average molecular weight of from about 10,000 to about 500,000, as measured by the GPC/DV method.

9. The copolymer of claim 8 wherein the copolymer is semicrystalline and contains from about 98.4 to 99.9 percent of units derived from either the D or L isomer of lactic acid, based on the total moles of the lactic acid units, and from about 0.1 to about 1.6 percent of units derived from the other isomer, based on the total moles of the lactic acid units.

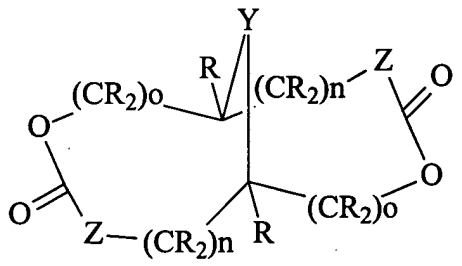
10. The copolymer of claim 9 which contains from about 0.3 to about 1.0 weight percent, based on the total weight of the copolymer, of repeating units derived from the bicyclic diester.

11. The copolymer of claim 8 wherein the copolymer contains up to about 98 percent of units derived from either the D or L isomer of lactic acid, based on the total moles of the lactic acid units, and about 2 percent or more of units derived from the other isomer, based on the total moles of the lactic acid units.

12. The copolymer of claim 11 that contains from about 0.3 to about 1.0 weight percent, based on the total weight of the copolymer, of units derived from the bicyclic diester.

13. The copolymer of claim 2 which is crosslinked.

14. The copolymer of claim 13 wherein the bicyclic diester and/or carbonate has the structure



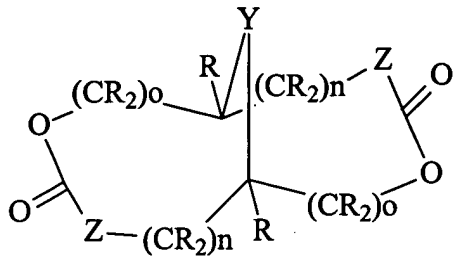
wherein each R is independently lower (C_{1-4}) alkyl or hydrogen, each Z is –O– or a covalent bond, each n and each o are independently zero or a positive integer, provided that the values of n and o, taken together, are such that the main ring contains 6 or 7 members when each Z is a covalent bond and 8 or 9 members when each Z is –O–, and Y is $-(CR_2)_m-$ where m is 1, 2 or 3.

15. The copolymer of claim 14, wherein the copolymer contains units derived from lactide.

16. The copolymer of claim 15 wherein the bicyclic diester and/or carbonate is 2,5-dioxa-bicyclo[2.2.2]octane-3,6-dione.

17. A method comprising subjecting a mixture including monocyclic ester and/or carbonate and a bicyclic diester and or carbonate to conditions sufficient to polymerize the mixture to form a copolymer having units derived from the monocyclic ester and/or carbonate and repeating units derived from the bicyclic diester and or carbonate.

18. The method of claim 17, wherein the bicyclic diester and/or carbonate has the structure



wherein each R is independently lower (C_{1-4}) alkyl or hydrogen, each Z is –O– or a covalent bond, each n and each o are independently zero or a positive integer, provided that the values of n and o, taken together, are such that the main ring contains 6 or 7 members when each Z is a covalent bond and 8 or 9 members when each Z is –O–, and Y is $-(CR_2)_m-$ where m is 1, 2 or 3.

19. The method of claim 18, wherein the monocyclic ester and/or carbonate is lactide.

20. The method of claim 19, wherein the bicyclic diester and/or carbonate is 2,5-dioxa-bicyclo[2.2.2]octane-3,6-dione.

21. The method of claim 19 wherein the copolymer contains at least about 98 weight percent of units derived from either the D or L isomer of lactic acid, and up to about 2 weight percent of units derived from the other isomer, based on the total weight of the lactic acid.

22. The method of claim 21, wherein the bicyclic diester and/or carbonate constitutes about 0.3 to about 1.0 weight percent, based on the total weight of the monomers.

23. The method of claim 19 wherein the copolymer contains no more than about 98 weight percent of units derived from either the D or L isomer oflactic acid, and at least about 2 weight percent of units derived from the other isomer, based on the total weight of the lactic acid.

24. The method of claim 23, wherein the bicyclic diester and/or carbonate constitutes about 0.3 to about 1.0 weight percent, based on the total weight of the monomers.

25. The copolymer of claim 6 which has a melt flow rate at 210°C and under a weight of 2.16 kg of from about 4-12 g/10 min and a melt tension of at least about 2 cN.

26. The copolymer of claim 6 which has a melt tension of at least 12 cN.

27. A method comprising melt extruding a film from the copolymer of claim 1.

28. The method of claim 27 that further comprises orienting the film.

29. A method comprising blow molding the copolymer of claim 1.

30. A method comprising melt blending the copolymer of claim 1 with a blowing agent, and melt extruding the blend to form a plastic foam.

31. A method comprising extrusion coating an article with the copolymer of claim 1.

32. The copolymer of claim 25 which has a melt tension of at least 6 cN.

33. A blend of the copolymer of claim 1 with a linear polylactic acid polymer.